

PROGRAM OF SUPPORT FOR TECHNOLOGICAL INNOVATION

(GU-0135)

EXECUTIVE SUMMARY

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| Borrower and guarantor: | Republic of Guatemala | |
| Executing agency: | National Science and Technology Council (CONCYT), by way of its National Science and Technology Secretariat (SENACYT) | |
| Amount and source: | IDB: (OC Single Currency Facility) | US\$10.7 million, up to US\$5 million of which will receive Intermediate Financing Facility resources for the payment of interest |
| | Government: | US\$ 3.2 million * |
| | Total: | US\$13.9 million |
| Financial terms and conditions: | Amortization period: | 25 years |
| | Grace period: | 3.5 years |
| | Disbursement period: | 3 years |
| | Interest rate: | variable |
| | Inspection and supervision: | 1% of the loan amount |
| | Credit fee: | 0.75% per annum on the undisbursed balance |
| | Currency: | U.S. dollars |
| Objectives: | <p>The primary objective of the program is to enhance the productivity and competitiveness of small and medium-sized enterprises (SMEs), by: (i) providing funding for technological innovation; (ii) implementing a technology extension and information service; and (iii) consolidating a medium- and long-term policy framework for the sector.</p> <p>By the end of the program, businesses, universities, specialized technology centers and similar institutions will have enhanced their know-how and capacity to generate, adopt, and/or transfer innovative technologies.</p> | |

* This amount includes beneficiaries' contributions of up to US\$2.2 million.

Description: The program has been structured into three components plus the establishment of a new administrative department in SENACYT. The main features of these components are as follows:

Component 1: Financing technological innovation

This component will provide cofinancing (matching grants) to: (i) meet the demand for technological innovation on the part of small and medium-sized enterprises; (ii) improve the supply and availability of technological services by strengthening institutions specializing in such services; and (iii) create technology management centers to promote and facilitate commercial dealings between businesses and specialized centers.

Component 2: Technology information service

The objective of this component is to facilitate the gathering, organization and dissemination of technological information required by SMEs. The component will finance: (i) creation of a network of technology extension agents; (ii) a pilot project to expand electronic information services that are useful to SMEs; and (iii) a pilot project to equip community information centers with technology so they can offer SMEs access to the Internet and other modern information and communications services.

Component 3: Support for an enabling framework to foster innovation

This component will help expand and update the policy framework and fund institutional support to improve science education and the dissemination of scientific knowledge and technological know-how. It includes two subcomponents: (i) financing for a second stage of the National Science, Technology and Innovation Plan (2001-2005) and the associated dissemination and promotion campaign for the National Plan and the program; and (ii) a program to improve secondary-school science, mathematics and technology education.

In addition, the program will fund the establishment of a new Technological Innovation Department (DITEC) to strengthen administrative management in CONCYT.

The program's relationship to the Bank's sector and country strategy:

The Bank's strategy agreed upon with the Government of Guatemala includes support for economic growth, modernization of the State, and competitiveness. The support that this program will provide to SMEs will build on the potential of the small and medium-sized enterprise sector as an engine of economic growth, by promoting practical applications of science and technology in their production methods,

thereby making them more competitive and enhancing their export capacity and thus boosting their earnings.

Environmental and social review:

There is no provision in the proposed program for financing physical infrastructure. Execution of the operation is not expected to have any negative environmental impact. The program's Operating Regulations will include specific criteria to ensure that no adverse environmental impacts are generated in the subprojects financed. Technology extension agents will receive, as part of their training, instruction in identifying environmental impacts that could be produced by the enterprises they assist. In addition, the Technology Information Node and the Community Information and Technology Centers will have available information on clean technologies and basic procedures for recognizing possible harmful effects on the environment and for mitigating the most common negative impacts.

Benefits:

At the end of the program, the technological capacity of small and medium-sized enterprises in terms of production and exports will be considerably stronger. That improvement in turn will have a favorable impact on national economic growth and improve SMEs' global competitiveness.

The following are the expected program outputs and outcomes: (i) a policy framework that will facilitate technological innovation generally; (ii) a foundation for sustainable operation of a funding mechanism for technological innovation; (iii) adoption by at least 250 SMEs of high-technology practices and procedures that will enhance their productivity and competitiveness in the medium term; and (iv) at least 10 science and technology service providers offering competitive, higher quality services.

In addition, new opportunities for financing innovation and technical support will allow for collective learning about the uses and benefits of science and technology. In particular, these opportunities will help bring the academic world and producing sectors into closer touch, whereupon researchers will have more input into efforts to resolve national development problems.

Risks:

From an institutional standpoint the program could encounter two main risks: (i) CONCYT might be unable to develop a productive, effective and efficient relationship with SMEs; and (ii) the institutional backup required for CONCYT to sustain the activities initiated under this program might not be developed.

With respect to the first risk, program funds have been earmarked for hiring a consulting firm or institution specializing in cofinancing technological innovation, similar to that proposed in this program. As well, to support management of the technology extension service, CONCYT will engage an international consultant with a solid track record in operating successful extension services.

As for the second risk, the financing and technical assistance facilities are expected to spur recipients (on the supply and demand side) to increase their support for the sector's advancement – both at the individual level and by leveraging other funds. The midterm evaluation will verify this assumption, seeking evidence of the program's viability and financial sustainability, including the government's intention to support this sector in future.

In terms of the supply of science and technology services, there is a risk that universities and other technology service providers might not adapt their structures and regulations so as to permit effective linkages with businesses that seek to buy their services. To expedite such changes the program will create management centers which will, through competition, facilitate marketing and lower transaction costs of obtaining technology services. Furthermore, the current political and economic climate in Guatemala holds out a unique opportunity: with the civil war at an end the universities have undertaken to strengthen their links with the productive sector.

**Special
contractual
clauses:**

Conditions precedent to the first loan disbursement:

1. Upon fulfillment of the Bank's standard conditions precedent to disbursement, and presentation of the agreement for transferring program resources from the borrower to CONCYT, up to US\$200,000 of the loan proceeds may be disbursed, as part of the sum budgeted for DITEC (paragraph 3.10).
2. **Conditions precedent to disbursement of the balance of the loan proceeds:**
 - a. Entry into force of the program's Operating Regulations (paragraphs 3.11, 3.22).
 - b. Hiring of consulting services for component 1 (paragraph 3.14).
 - c. Startup of the Technological Innovation Department, with the necessary personnel (paragraph 3.9).

In addition, the following special conditions must be fulfilled prior to disbursement of the following specific components:

3. Conditions precedent to disbursement of component 2: Hiring of a consultant with expertise in technology extension services management for the technology extension network subcomponent (paragraph 3.18).

4. Conditions precedent to disbursement of component 3: Entry into force of the agreement between CONCYT and the Ministry of Education for execution of the subcomponent for improving secondary-school science, mathematics and technology education (paragraph 3.21).

Conditions to be fulfilled during program execution: (i) within nine months after the effective date of the loan contract, evidence must be submitted that the duration of the Administration Trusteeship Agreement with FONACYT has been extended (paragraph 3.8); and (ii) the borrower undertakes that in order to gain access to resources under subcomponent 3.2, the Secondary Education Extension and Improvement Program institutes (PEMEMs) must be in compliance with the requirements established in paragraph 3.21.

The loan contract will also include standard Bank conditions relating to audits, reports, inspections, evaluations, maintenance, the hiring of consultants, and procurement of goods.

Poverty-targeting and social sector classification:

Because the primary beneficiaries of the program will be small and mid-sized enterprises and such businesses do not necessarily include low-income persons, the program is not classified as poverty targeted nor as a social equity enhancing and poverty reduction project as provided in the Eighth Replenishment document (paragraph 4.12).

Exceptions to Bank policy:

None.

Procurement:

For public sector institutions participating in the program, (a) international competitive bidding will be mandatory for purchases of goods for this program costing US\$250,000 or more; and (b) international calls for proposals will be required for the hiring of consultants on contracts valued at US\$200,000 or more. International calls for proposals also will be required in cases where consultants are needed with specialties that are difficult to find in Guatemala. The procurement of goods and hiring of consultants by these institutions will be subject to standard Bank procedures. There are no plans for

civil works to be funded out of the loan proceeds or the local counterpart contribution (paragraph 3.27).

Small and medium-sized enterprises taking part in the program will purchase goods or related services and hire consultants following Bank rules for the private sector, as described in paragraph 3.28.